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(54) **METHOD AND SYSTEM FOR PERFORMING AUTOMATED REGRESSION TESTS IN A STATE-DEPENDENT DATA PROCESSING SYSTEM**

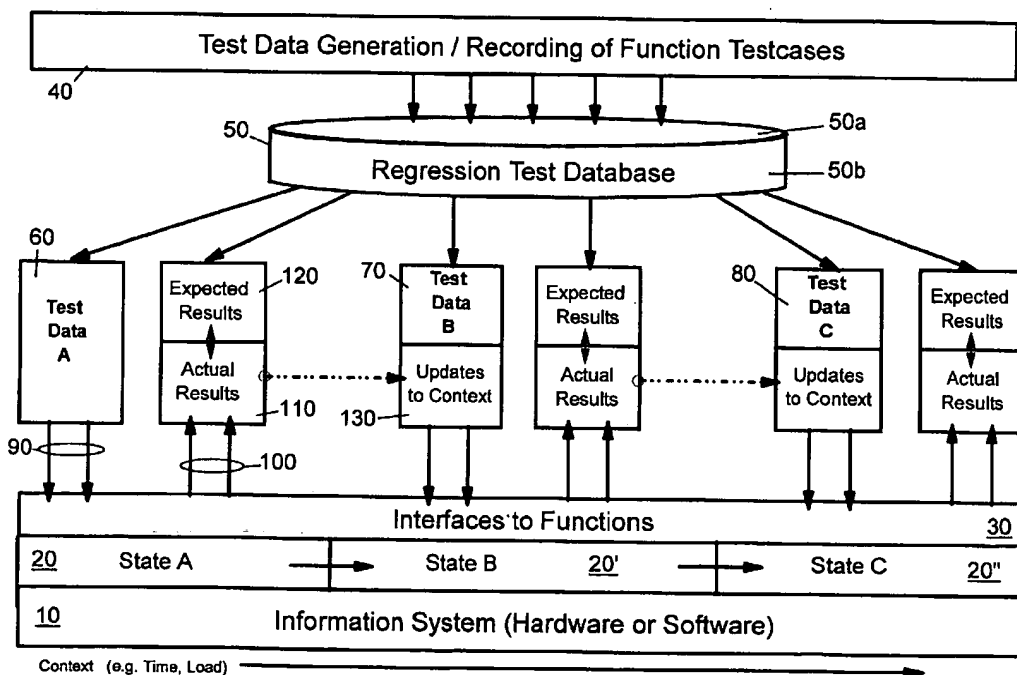(75) Inventors: **Michael Stefan Blum**, Aidlingen (DE); **Toni Friedrich**, Eutingen (DE)

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(57) **ABSTRACT**

Disclosed are a method and system for performing regression tests in a state-dependent data processing environment where data are processed by means of at least one function having a signature of defined parameters and corresponding values. A regression test is performed using at least one pre-determined set of test data and one pre-recorded function test case corresponding to said signatures and being used to execute said at least one pre-recorded function test case. The proposed mechanism particularly comprises the step of adapting said at least one function test case or said at least one set of test data to any changed signatures caused by a state transition of said data processing system. The mechanism thus provides automated regression tests in such a data processing environment and enables re-execution of a regression test in a changed context of the underlying data processing environment.

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ABSTRACT:

Disclosed are a method and system for performing regression tests in a
state-dependent data processing environment where data are processed by means
of at least one function having a signature of defined parameters and
corresponding values. A regression test is performed using at least one
pre-determined set of test data and one pre-recorded function test case
corresponding to said signatures and being used to execute said at least one
pre-recorded function test case. The proposed mechanism particularly comprises
the step of adapting said at least one function test case or said at least one
set of test data to any changed signatures caused by a state transition of said
data processing system. The mechanism thus provides automated regression tests
in such a data processing environment and enables re-execution of a regression
test in a changed context of the underlying data processing environment.

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Summary of Invention Paragraph - BSTX (7):
   [0006] More particularly, the above approach provides a test management
program connected to a test case database that creates a test **template**.
Uncovered errors are documented and identified as so-called `Modification
Requests` (MRs). The programmer modifies the source file(s) of the program in
order to correct the identified errors. The programmer also designs a test
that may be applied to a master program when it is recompiled to substitute the
modified source file(s). The test is designed to test the master program to
determine if the errors documented in the MR is actually be corrected. In
particular, it is therein proposed that only those test cases associated with
the source file(s) that have been changed and thus associated with the
corresponding MR(s) are invoked to regression test the recompiled master
program. The mentioned process of updating the source code is done parallel
with the updating of the test code.

Detail Description Paragraph - DETX (93):
   [0128] It should be mentioned that the invention is generally applicable to
any regression test of context dependent systems which require dynamic updates
on the test data during runtime. For all systems with function interfaces that
are defined in a level of detail required for the above described automatic
update algorithm, a system independent test apparatus can be build. This

apparatus just have to implement the technical interface of the system and does not require any enhancements for the logically changes of the systems interfaces. All regression tests during a typical life-cycle of a system can be accomplished just by **replacing the test data** with new function tests for any changed or new function. The test apparatus itself does not need to be maintained anymore.